

REROOF PERMIT APPLICATION PROCEDURES

California Energy Code Section 118 (i)

Beginning January 1, 2010 the 2008 California Energy Efficiency Standards for residential and non-residential will go into effect and require all re-roofing to meet the Cool Roof requirements of the updated Title 24 Energy Standards.

Applies to:

- Low sloped roofs (2:12 slope or less)
- Steep sloped roofs (greater than 2:12 slope)
 - Residential reroofs where more than 50% of the roof is re-roofed, or more than 1000 square feet, whichever is less.
 - Non-residential reroofs where more than 50% of the roof is re-roofed, or more than 2000 square feet, whichever is less.

Rating and Labeling

Roofing products that are used for compliance with the standards are required to be tested and labeled by the Cool Roof Rating Council (CRRC) per §10-113 and that liquid applied products meet minimum standards for performance and durability per §118(i)4. The CRRC is the supervisory entity responsible for certifying cool roof products. Testing procedures include tests for both solar reflectance and thermal emittance. The roofing products manufacturer must have its roofing product tested for solar reflectance and thermal emittance, and be labeled according to CRRC procedures. Figure 8-1 provides an example of an approved CRRC product label.


	Solar Reflectance	<u>Initial</u> 0.00	<u>Weathered</u> Pending
	Thermal Emittance	0.00	Pending
	Rated Product ID Number		
	Licensed Seller ID Number		
	Classification		
Production Line			
<p>Cool Roof Rating Council ratings are determined for a fixed set of conditions, and may not be appropriate for determining seasonal energy performance. The actual effect of solar reflectance and thermal emittance on building performance may vary.</p> <p>Manufacturer of product stipulates that these ratings were determined in accordance with the applicable Cool Roof Rating Council procedures.</p>			

Figure 8-1-CRRC Product Label and Information

COOL ROOF PRODUCTS SHALL MEET THE FOLLOWING REQUIREMENTS AS NOTED BELOW:

CALIFORNIA ENERGY CODE

- **SECTION 149 ROOF REPLACEMENTS - NONRESIDENTIAL, HIGH-RISE RESIDENTIAL, HOTELS / MOTELS**

STRUCTURE	LOW-SLOPE < 2/12	STEEP SLOPE	ROOFING DENSITY < 5 PSF	ROOFING DENSITY > 5 PSF	SOLAR REFLECTANCE (MINIMUM)	THERMAL EMITTANCE (MINIMUM)	SRI	NOTES
NONRESIDENTIAL	X				0.55	0.75	64	1-2
NONRESIDENTIAL		X	X		0.20	0.75	16	2-3
NONRESIDENTIAL		X		X	0.15	0.75	10	2
HIGH-RISE RESIDENTIAL	X				0.55	0.75	64	1-2
HOTELS / MOTELS	X				0.55	0.75	64	1-2
HOTELS / MOTELS		X	X		0.20	0.75	16	2-3
HOTELS / MOTELS		X		X	0.15	0.75	10	

NOTES:

1. If the existing roofing is removed to the roof deck, the exposed area **must be insulated to R-14** value.
 - Exception 1: The existing roof is insulated with at least R-7 insulation, or it has a U-factor lower than 0.089.
 - Exception 2: If the AC units are not to be lifted, the insulation may be limited to provide a minimum 8" exposure at the base flashing.
 - Exception 3: The insulation may be less than R-14 if the wall base flashing would be reduced to less than 8" by the installation of the R-14, and the following apply:
 - The walls are furnished with siding other than roofing; and
 - The exterior wall siding would have to be removed; and
 - Replaced roof area ÷ linear wall dimension ≤ 25.
2. If the roofing product does not meet Cool Roof requirements, the Overall Envelope Time Dependent Valuation Energy Approach of Section 143(b) may be used.
3. The attic ventilation is required to meet current California Building Code requirements when roofing with composition shingles due to manufacturer's warranty requirements. Low vents must be distributed equally around the structure. **(provide completed attic ventilation worksheet)**

TYPICAL VALUES FOR ATTIC VENTS

Soffit Vents

3.5 x 14.5 = 30 sq ins
3.5 x 22.5 = 50 sq ins
5.5 x 22.5 = 80 sq ins

Small Dormer Vents

50 sq ins

Large Dormer Vents

100 sq ins

Ridge Vents

Per ICC Evaluation Report

COOL ROOF PRODUCTS SHALL MEET THE FOLLOWING REQUIREMENTS AS NOTED BELOW:

CALIFORNIA ENERGY CODE

• **SECTION 152 ROOF REPLACEMENTS - LOW-RISE SINGLE FAMILY & MULTIFAMILY RESIDENTIAL**

STRUCTURE	LOW-SLOPE < 2/12	STEEP SLOPE	ROOFING DENSITY < 5 PSF	ROOFING DENSITY > 5 PSF	SOLAR REFLECTANCE (MINIMUM)	THERMAL EMITTANCE (MINIMUM)	SRI	NOTES	EXCEPTIONS
LOW-RISE RESIDENTIAL	X				0.55	0.75	64		h
LOW-RISE RESIDENTIAL		X	X		0.20	0.75	16	1	a-b-c-d-e-f-g
LOW-RISE RESIDENTIAL		X		X	0.15	0.75	10	1	a-b-c-d-e-f-g

EXCEPTIONS: (Cool Roof not required if)

- Insulation with a thermal resistance of at least 0.85 hr-ft²-F/Btu or at least a ¾ inch airspace is added to the roof deck over an attic; **OR**
- Existing ducts in the attic are insulated and sealed according to Section 151(f)10, HERS rating required with CF-4R Form **OR**
- Attic ventilation equal to 1/150 of the attic floor area and 30% within 2' vertical of the ridge. **OR**
- R-30 attic insulation. **OR**
- Building has a radiant barrier in the attic meeting the requirements of Section 151(f) 2. **OR**
- Building has no ducts in the attic. **OR**
- R-3 insulation installed on the deck above vented attic. **OR**
- Building has no ducts in the attic

NOTES:

- The attic ventilation is required to meet current California Building Code requirements when roofing with composition shingles due to manufacturer's warranty requirements. Low vents must be distributed equally around the structure. ***(provide completed attic ventilation worksheet for multi-family reroofs)***

TYPICAL VALUES FOR ATTIC VENTS

Soffit Vents

3.5 x 14.5 = 30 sq ins
3.5 x 22.5 = 50 sq ins
5.5 x 22.5 = 80 sq ins

Small Dormer Vents

50 sq ins

Large Dormer Vents

100 sq ins

Ridge Vents

Per ICC Evaluation Report

- ★ **Roof areas covered by building integrated photovoltaic panels and building integrated solar thermal panels and existing roof areas that have thermal mass over the roof membrane with a weight of at least 25 lb/ft² are exempted from Cool Roof Requirements for both Residential and Non-Residential.**

2008 CEC SECTION 118(i)

ROOFING PRODUCTS SOLAR REFLECTANCE AND THERMAL EMITTANCE

1. In order to meet the requirements of Sections 141, 142, 143(a)1, **149(b)1B**, 151(f)12, 152(b)1H or **152(b)2**, a roofing product's thermal emittance and 3-year aged solar reflectance shall be certified and labeled according to Section 10-113.
Exception: Roofing products that are not certified shall assume the following default values;
 - Asphalt shingles
Aged reflectance: 0.08
Thermal Emittance: 0.75
 - Other roofing products:
Aged reflectance: 0.10
Thermal Emittance: 0.75
2. If CRRC testing for 3-year aged reflectance is not available for any roofing product, the 3-year aged value shall be derived from the CRRC initial value using the equation:
 $R_{\text{aged}} = [0.2 + 0.7(p_{\text{initial}} - 0.2)]$ where p_{initial} = the initial solar reflectance.
3. Solar Reflectance Index (SRI), calculated as specified by ASTM E 1980, may be used as an alternative to thermal emittance and solar reflectance.
4. Liquid applied roof coatings applied to low-sloped roofs as the top surface shall:
 - A. Be applied to the entire roof surface.
 - B. Meet performance requirement in Table 118-B or the minimum performance requirements of ASTM C 836, D 3468, **D 6083** or **D 6694**.
 - C. Aluminum-pigmented asphalt roof coatings shall meet the requirements of ASTM D 2824 or ASTM D6848 and be installed as specified by ASTM D 3805.
 - D. Cement-based roof coatings shall contain a minimum of 20 percent cement and shall meet the requirements of ASTM C 1583, ASTM D 822 and ASTM D 5870.

Values for Solar Reflectance and Thermal Emittance can be found on the Cool Roof Rating Council Website at www.coolroofs.org

INSTRUCTIONS TO CONTRACTORS/APPLICANTS:

In order for Reroof Permit applications to be processed, a signed and completed permit affidavit along with the completed Reroof Permit Application form shall be provided to the Building and Safety Services Permit Center. All appropriate documentation to verify roofing products meet the requirements above shall be submitted at the time of application for a Reroof Permit.

*****INCOMPLETE APPLICATION FORMS WILL DELAY THE PROCESSING OF PERMIT REQUESTS, AND PERMIT ISSUANCE AND INSPECTIONS.**

When Reroof projects are subject to the Cool Roof requirements, all contractors and permit applicants shall complete the appropriate sections of the "Re-roof Permit Application" form. If the proposed Reroof qualifies under one of the exceptions shown in the table for Low-Rise Residential, the following must be provided:

- The exception declared on the appropriate section of the Re-roof Permit Application form.
- A signed CF-4R form from a certified HERS rater performing a duct leakage test will be required if declaring ducts in attic are insulated and sealed. (Exception 'b')
- Insulation Certificate signed by a licensed Insulation Contractor to verify minimum R-30 ceiling insulation exists. (Exception 'd')

The Attic Ventilation Worksheet for Multi-Family and Non-Residential Reroofs shall be completed by the contractor/applicant to determine the number of vents required to comply with minimum Building Code requirements. Attic ventilation requirements for Residential Reroofs shall be determined by the contractor/applicant and verified by the building inspector without the worksheet.

Required attic ventilation shall be provided for all reroof projects. All new venting to be added shall be clearly indicated on the worksheet form as applicable.

- **FOR LARGE STRUCTURES OR STRUCTURES WITH COMPLEX ROOF AND ATTIC AREAS, A ROOF PLAN SHALL BE PROVIDED SHOWING LOCATION OF EXISTING AND PROPOSED ATTIC VENTS.**

******ALL REROOF PERMIT APPLICATION FORMS FOR RESIDENTIAL-ONE AND TWO FAMILY DWELLINGS, MULTI-FAMILY (3 OR MORE) UNITS, AND NONRESIDENTIAL-HOTEL/MOTELS-HIGH RISE RESIDENTIAL CAN BE FOUND UNDER "FORMS" OF THE BUILDING AND SAFETY WEB PAGE.**